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Tech-Art Driven Shader Pipelines in 3dsmax

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Shader creation for Next-Gen
is increasingly Art-driven.

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TAs have more responsibility over the Shader pipeline.



Shader Support in software like 3dsmax is too limited.

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Scripting languages can help bridge the gaps.

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Create a data-driven Shader pipeline with Maxscript's help.

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Shader creation tools must do more than make Shaders.

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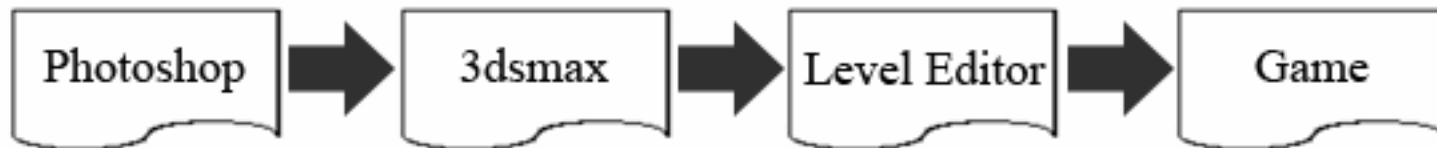


Consider your Pipeline.

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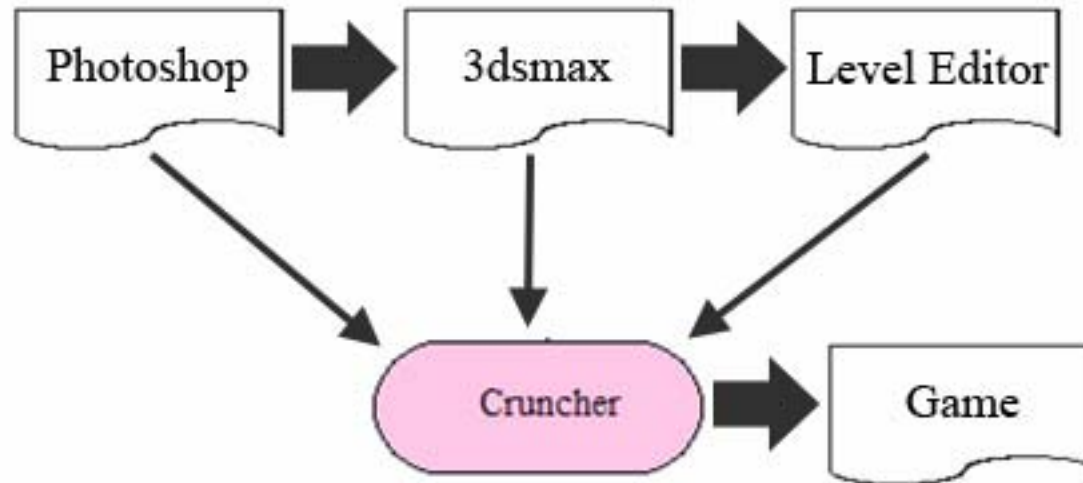


The Art-pipeline functions as a supply-chain for art assets.



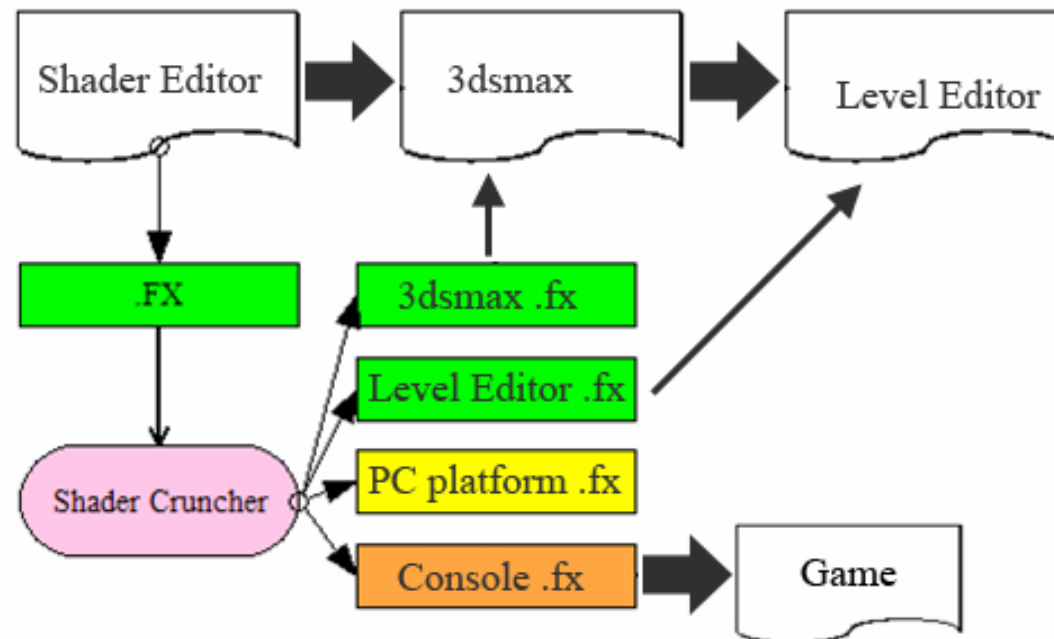


Data dependency does not mirror asset dependency.





Both Pipeline and supply-chain placement, effects your choices.





Identify your pipeline goals.

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Put look-development first.

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Improve iteration speed.

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Manage optimization and feature creep concerns.

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Survey your tool options.

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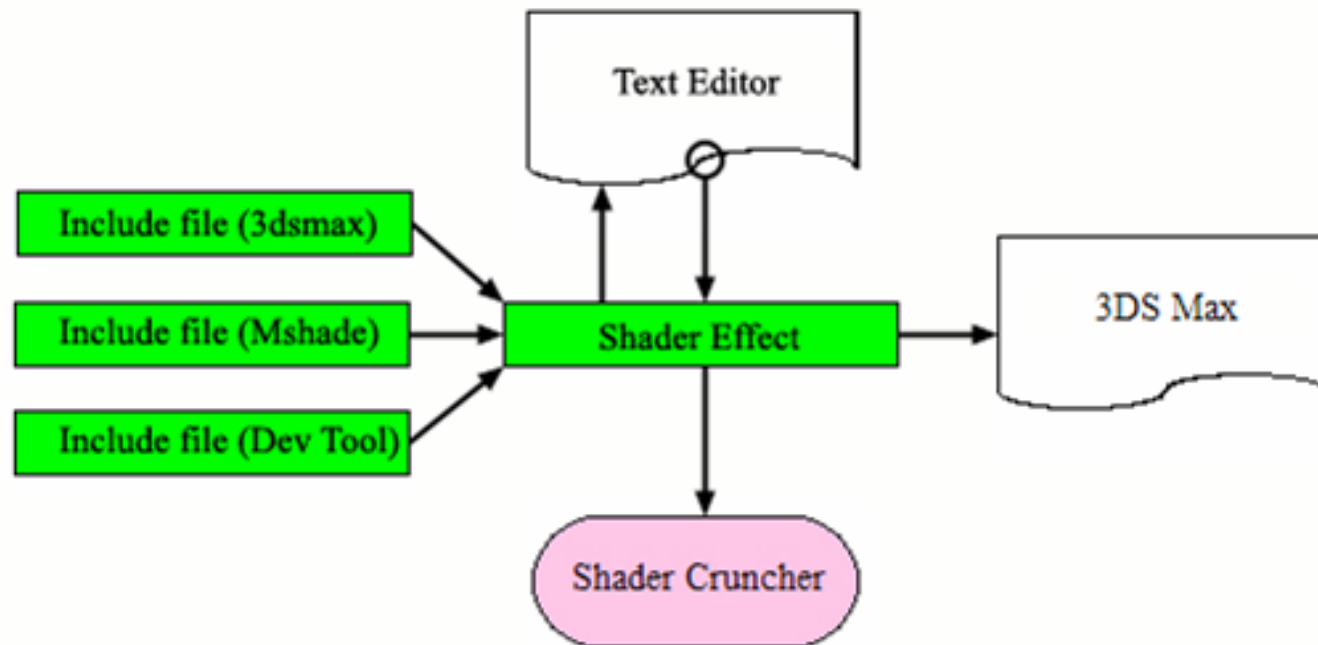
Off-the-shelf tools require customization.



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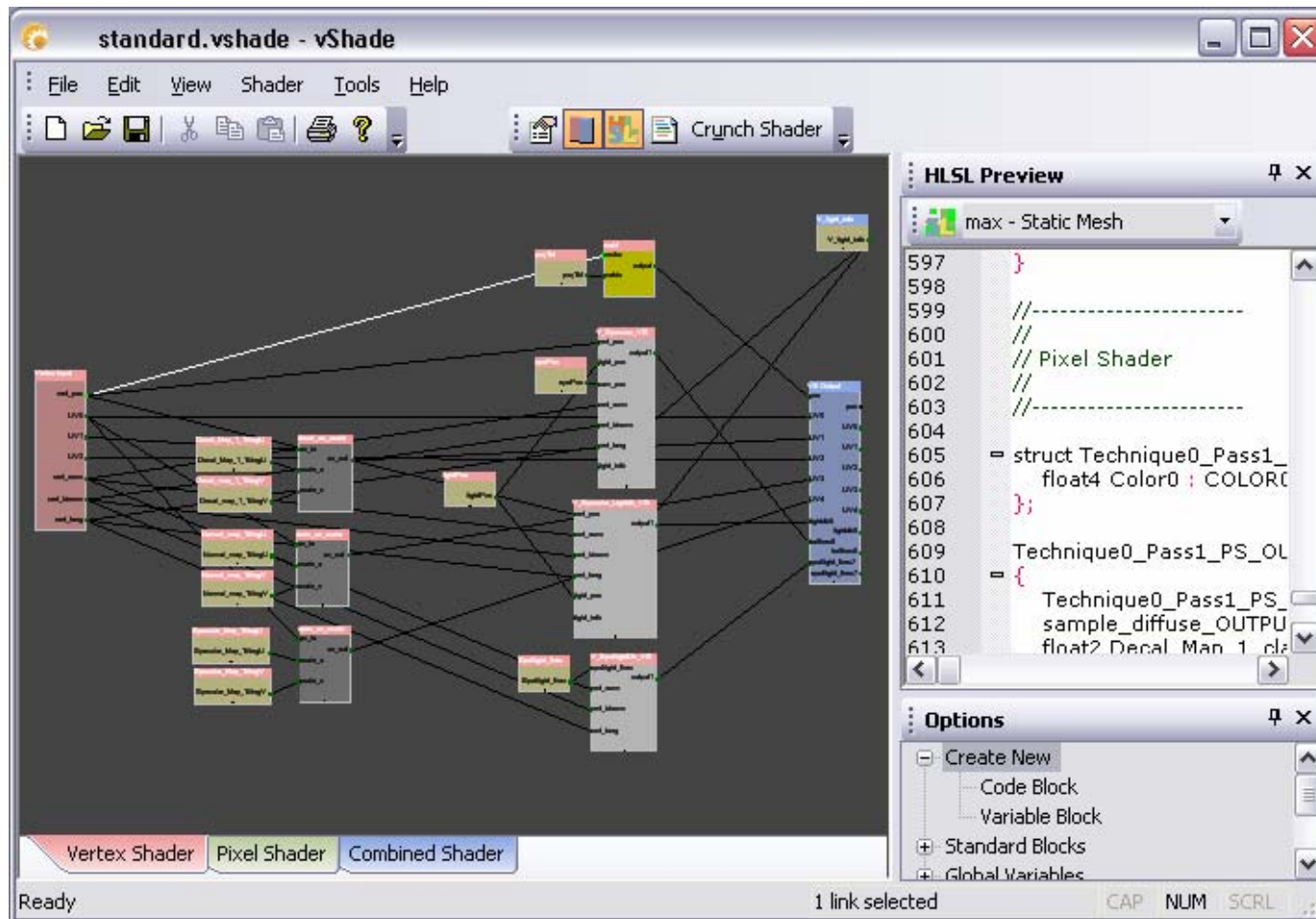


Direct coding is flexible but knowledge intensive.





Programmer support can make custom tools a best fit.





Using Shaders effectively is harder than making them.

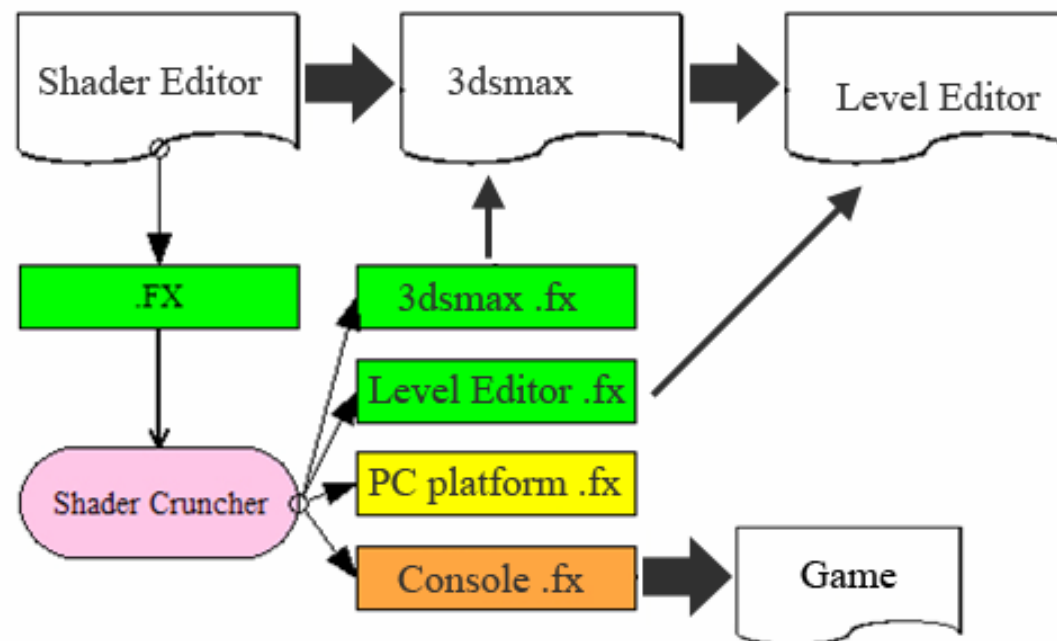
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Pipeline level Shader issues are not obvious.



The Shader pipeline is bigger than the art-pipeline.



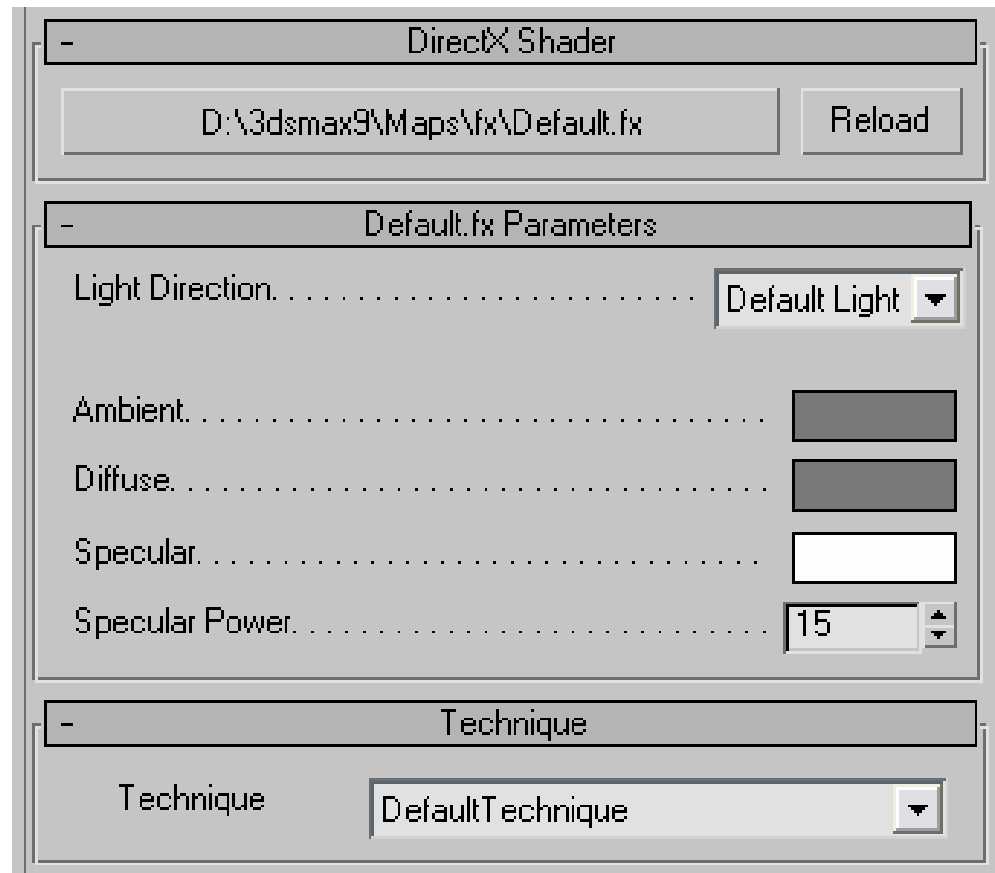


Shaders are art assets as well as code assets.

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Apps like 3dsmax are not
'pipeline-ready' for Shaders.





Downstream procedures
depend on upstream
parameters.



Shader parameters persist through the pipeline.



Many parameters can be common across Shaders.



Independent metadata can
define a common namespace.

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Data-driven design offers some solutions.

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Reduce the code-base of
middleware.

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Automatically resolve
upstream dependencies.

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Keep development focused on Shaders.

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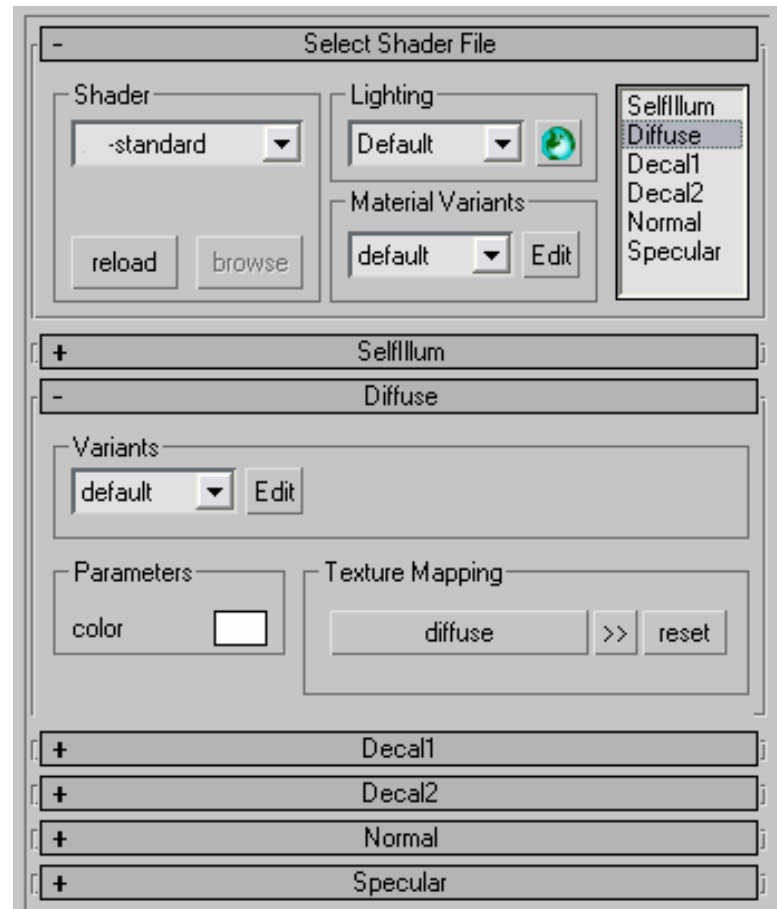


Shader materials must do more than render Shaders.

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Design one Shader Material to manage all Shaders.





Identify common Shader parameters.



Create a spec for Shader metadata.

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Use Custom Attributes for dynamic implementation.

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Implement generic data-driven Custom Attributes.

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Abstract Shader parameters with 'parameter maps'.

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Abstract the custom attribute implementation with Structs.

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Use Attribute redefinition to Generalize the user-interface.

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Avoid the pitfalls in 3dsmax.

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Write optimized code.

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Avoid obscure and undocumented limitations.

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Respect the limits of the referencing system.

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Can scripting help bridge the gap?

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Today's 3d applications
require scripting for real
Pipeline level Shader support.

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Create a data-driven Shader pipeline with Maxscript's help.

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Bridging the gaps for a better Shader Pipeline

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Better Shaders are in the Pipe...

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